PanMan

Rhythmic Autopanning Effects

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C O N T E N T S

I N T R O

THANKS!

First off we want to say a big THANK YOU for your purchase of PanMan.

We know that there are an awful lot of plug-ins for you to choose from and we are truly grateful that you have chosen to spend your hard earned money on our products. We take a lot of pride in our work and we sincerely hope that you find our plug-ins inspirational and musically useful.

Installation

If you're reading this manual, you've PROBABLY already installed PanMan successfully on your system. If you need any more help in this area, please read our SoundToys Getting Started guide, which covers installation for all of our plug-ins.

Basics

It's also important to know a few things about how our knobs work (there are a few little hidden tricks), and about using presets and automation. All of this is covered in the SoundToys Getting Started guide.

USING PANMAN

You might be thinking that panning is pretty simple. And PanMan can do simple. It can do your standard back-and-forth, left-to-right, right-to-left panning. But it can do a whole lot more than that too, a lot of things you've probably never even thought of. We took a hard look at classic analog autopanners, like the celebrated PanScan, the Cyclosonic FS-1, and the Spanner. We listened to them and asked ourselves not only what makes these units cool, but what they were missing as well. We ended up with 6 different modes (including not one but TWO unique rhythm modes) and a whole lot of other goodies, including dynamic pan, rate, and width modulation that constantly changes and adapts to your tracks. We even let you pan "beyond the speakers." Simply put, you just can't do this stuff with automation.

Basic Controls

The controls that you will see on the face of PanMan depend upon the modulation mode that PanMan is currently in. A few of the controls in PanMan are basic, global controls that appear in every mode. We'll summarize those controls first, then breakdown each unique modulation mode that PanMan has to offer.

Offset

The "Offset" control defines the base pan position. It defaults to 0 degrees (Center), and ranges from -105 degrees to +105 degrees. Note that +/-90 degrees will put your incoming signal completely in the right/left channel, respectively. Going out to 105 degrees on either side will push the signal "beyond the speaker."

Width

The "Width" control defines how far around the offset that the pan position can be modulated. It defaults to 180 degrees, but can go "beyond the speakers" at up to 210 degrees of modulation (which is from -105 to +105).

There is no right or wrong setting combination for Offset and Width. Note however, that if you set the Offset to say, +90 degrees, and Width to 180, the position of the audio will never go beyond 105 degrees.

Smoothing

The "Smoothing" knob controls how smoothly the pan position will transition from one spot to another. Set this knob to "Hard" if you want hard jumps between pan positions, and to "Soft" if you want softer, more gradual transitions. If a left-to-right or right-to-left direction is selected, smoothing will control how hard the "snap back" will be.

Input and Output Level

The Input and Output level controls are used to (you guessed it) boost or attenuate either the input or output of PanMan. The default setting of the controls approximates "unity gain" (what goes in comes out the same level) and should provide the best overall "normal" sound quality when set to these levels. The LED's beneath the Input and Output knobs provide visual display of the input and output signal levels. The yellow LED indicates that the signal is 6dB below clipping. The red LED indicates maximum signal

level, and possible clipping which may or may not sound so good depending on the switch setting and what your ears like to hear.

Analog Mode Switch (Distortion/Overdrive Characteristics)

The analog mode toggle switch and flavor button allow you to choose how PanMan will distort or "saturate" as the signal input increases, which is more noticeable at high signal levels.

Analog Mode
In 'analog' mode, PanMan will saturate in the nice, warm and friendly manner similar to the way real analog gear responds. The analog setting adds a certain amount of distortion at all signal levels. The Analog setting sounds really good but keep in mind the "Analog" setting eats up significantly more DSP resources. Sorry, no free DSP lunch here!

Digital Mode
When the analog mode switch is off, PanMan is in 'digital' mode. In this mode, higher signal levels will clip in the typically nasty, crunchy digital way. This too can be desirable depending on what effect you're trying to achieve. Lower level sounds are left pretty much unchanged and sound spic-n-span clean. Also note that the digital setting uses significantly less DSP horsepower than the analog setting. (What are horses doing in my computer anyway?)

Needless to say you should experiment with both settings using various types of source material and cranking the input levels up and down to hear what it all sounds like. A fun and educational exercise!

Pan Meter

The Pan Meter is a collection of red and yellow LEDs that show you the current pan position. The LEDs charge and discharge like real LEDs and will create trails when the pan position moves quickly. The red LEDs indicate the normal range of panning (-90 to +90 degrees). Beyond these lie the yellow LEDs which represent the extended range of PanMan. If you see the meter lighting up the yellow LEDs, that means you are panning beyond the speakers.

Note that there's nothing wrong with panning that far, but if it's not what you want, use the meter to keep your panning inside the red.

Choosing a Modulation Type and Source

When it comes to modulation the more sources you have the greater the sonic possibilities. PanMan includes SIX different modulation options selected under the small white button below the Rate knob. The available types of modulation available include:

LFO (default)
Rhythm Step
Rhythm Shape
PingPong (Triggered)
Random
Step (Triggered)

To select one of the modulation sources, click on the "LFO" pop-up button, drag the mouse to highlight the desired type and let go. You will notice that the name above the button will change (as will the parameters in this area of the front panel). Though the button name will change to reflect the selected type of modulation, the function of this button remains constant: opening the menu to select among the various types of modulation.

LFO Mode

The "LFO" in LFO Mode stands for Low Frequency Oscillator. A LFO creates a repeating waveform that oscillates at some desired frequency. It is referred to as a "Low" frequency oscillator because this frequency is usually in he sub-audio range (i.e., less than 20 Hz). LFO Mode modulates the pan position by repeating one of the three basic shapes (pan directions) at the rate you set it to.

Rate

The 'Rate' knob controls the frequency of the LFO and is set in Hz. The range is from 0.1Hz to 10Hz. A sweep rate of "1 Hertz" (1Hz) means that the LFO modulation will repeat once per second.

Direction

The direction buttons allow you to select the basic shape that the LFO will repeat. There are three "directions": Left-to-Right, Back-and-Forth, and Right-to-Left. Each button has an arrow on it that tells you what direction it is. Only one direction can be selected at a time, and the button corresponding to that direction will be lit.

Tweak (Dynamics)

Pressing the tweak button in LFO mode will open up the LFO dynamics panel (shown above), giving you access to knobs to modulate the rate, offset and width depending on the level of the incoming audio. There's also controls for the threshold, attack, and release settings of the envelope detector that controls the dynamics modulation. You already have the LFO modulating the pan position, but with the dynamics, you can modulate your modulation in three different ways, simultaneously.

Threshold

Before we can really discuss the other controls located here, you first need understand how the Threshold knob works as it affects the responsiveness of the other knobs. The Threshold control allows you to define a specific level (as in loudness) that the input must reach before any dynamic processing of the Rate, Offset, or Width as set with the other knobs will be implemented. The scale of the Threshold control is in standard 'dB'.

There are two things to keep in mind; 1) as long as the level of the input signal is above the Threshold level the modulation of Rate and Width will be "on" and activated, and as soon as the level of the input signal falls below the Threshold setting the modulation is turned "off" and de-activated, and 2) how "far" the input signal goes above the Threshold setting determines how "deep" the modulation will go (with the maximum available mod Width being defined by the settings of the other knobs.)

So the Threshold really determines how loud the signal must get before any alteration of the Rate and Width will start and once the signal passes the

Threshold setting how much of the modulation will be used. You will see that the white markings around the Threshold knob turn red based on the input signal (kind of like a VU meter), which makes it really easy to see changes in the level of the input signal and set the Threshold accordingly.

Rate Mod

The Rate Mod knob allows you to dynamically increase (or decrease) the rate of the LFO or Rhythm based on the level of the input signal, and the Threshold setting as discussed above. The modulation is either added or subtracted from the basic Rate as set on the front panel. The setting of this knob determines the maximum amount of rate modulation that can occur

The Rate Mod knob is bi-polar; when set straight up it is at the 'zero' position. As you turn the knob clockwise the rate will increase based the setting of the knob and/or the numbers entered into the LED display below. As you turn the knob counter-clockwise the rate will decrease based on the knob setting and/or the numbers in the LED display below the knob.

The Rate Mod scale is in octaves and is based on standard frequency scale; a setting of '1.00' will provide a doubling of the speed (x2), a setting of '2.00' will double the rate again (x4) and so forth. So a setting of '3.00' is equal to a three-octave increase in the rate (x9). The same approach is used as you turn the knob counter clockwise, except that the rate is decreased (slowed down) as opposed to sped up.

It is also important to note that you can still modulate the Rate even if PanMan is synced to an incoming midi clock. What happens is the rate is driven out of sync and sped up or down but once the mod level drops back to it's 'normal' or base level PanMan will grab hold again and dance in sync with the incoming midi clock. Cool, no?

Width Mod

The Width Mod is also a bi-polar control and allows you to dynamically increase or decrease the width of the pan effect, again, based on the setting of this knob as well as the Threshold setting as previously discussed.

When set straight up the Width Mod it is at the 'zero' position. As you turn the knob clockwise the width will increase based the setting of the knob and/or the numbers entered into the LED display below. As you turn the knob counter-clockwise the width will decrease based on the knob setting and/or the numbers in the LED display below the knob.

You can determine how much you wish to add to the width by setting the knob towards the 'Max' setting. Width Mod is in units of degrees. A setting of +45 degrees will add 45 degrees of width to your panning. Keep in mind that the maximum widths of +/- 105 degrees are always enforced. If Width on the front panel is set to maximum (105 degrees), you cannot add any more Width Mod. Similarly, if Width is set to 0 degrees, you can't take any more away.

Attack

To further increase the variations that can be achieved in modulating the Rate or Width PanMan allows not only to adjust *how much* change will occur but also how *quickly or slowly* the Rate and Width will change using the Attack and Release knob settings. Attack is based on time, in milliseconds, with a range from 0ms to 5000ms (5seconds).

Here's how it works. Once the input signal has passed the setting of the Threshold knob, any changes set by Rate Mod and Width Mod settings are called into play and will change the Rate or Width accordingly. What the Attack knob allows you to do is to define *how long* it will take for the Rate Mod or Width Mod to reach their full modulation amount.

At fast Attack settings (knob turned fully counter clockwise) the Rate and Width Mod will go to their full mod setting instantaneously. As you turn up and *increase* the Attack time it will take longer for the Rate and Width modulation to reach their full amount, or width of modulation. This lets you create smoother and slower changes in the rate and Width rather than the immediate and abrupt changes that would occur with a very fast Attack setting. As mentioned, this is dependent on the Threshold setting and how far past the Threshold setting the signal goes.

It is important to keep in mind that the attack and sustain characteristics of the input signal will directly affect how you will want to set the Attack time. If the signal is staccato and quickly moves above and below the Threshold it is likely that you will not hear the changes in the Rate or Width with slow Attack time settings. The input signal will not be above the Threshold setting long enough for the slower attack time to reach its full setting. It is also very important that the sound stay *above* the Threshold setting for a period equal to the Attack time for the modulation to respond.

Using various Attack times that are either very responsive to, or that are slower than the changes of the input signal level, allows you to create a wide variety of alterations in the pan effect. As we keep saying, there are no right or wrong settings. It all depends on what kind of effect you are trying to achieve. Experiment. There are a lot of neat possibilities.

Release

The Release knob works in a similar fashion the Attack knob but determines how quickly or slowly the Rate or Width mod will return to their 'normal' settings once the input signal has dropped below the Threshold setting. Release is based on time, in milliseconds, with a range from 0ms to 5000ms (5seconds).

Again, the way the level of the input signal changes will likely effect how you will want to set the Release time. If you want the modulation changes to track a quickly changing input signal you will likely want to have faster Release (and Attack) times. If you want the Width and rate mod to change more smoothly you can increase the Release (and/or Attack) times accordingly so they are slower than the rate of change in the level of the incoming signal.

Remember that the Threshold setting interacts with and has a direct affect on when the Rate and Width modulation will begin to occur, how much of the modulation will occur (based on how far above the Threshold setting the signal goes). How the Attack and Release times will be set will most often depend on the type of response you want and how long the signal stays above the threshold setting.

Env. Mode

The Envelope mode switch affects the way the underlying envelope follower, Threshold, Attack and Release responds and works together. There are two settings: 'Env' and 'Gate.

With the "Env" setting, all the controls work as described. The Threshold setting determines when the Rate and Width mod takes affect, how far above the Threshold setting affects how much of the mod is implemented and how long the signal stays above the Threshold determines how the Attack and Release will be used. This could be considered the 'standard' mode.

When the switch is set to "Gate" the envelope response changes as follows. The amount of Rate or Width mod is no longer dependent on how far above the Threshold setting the signal goes and instead responds more like an On/Off switch (or Gate). As soon as the input signal goes above the Threshold setting the Rate and /or Width mod will be driven to its maximum

settings (defined by the Rate Mod and Width Mod knobs) and at the rate determined by the Attack knob.

In the Gate mode the Width *will remain at its full value*, based on the Rate Mod and Width Mod knob setting, and will be "pinged" at their full value for as long as the input signal is above the Threshold. This can greatly affect how the rate and Width mod respond and it can be quite a bit different than the "ENV" mode. Both settings are useful and will provide a different response. As always a little bit of experimentation will go a long way.

Rhythm Step Mode

Rhythm Step mode allows you to "step" through various positions in the stereo field, changing to a new position at every rhythmic interval. You can use the provided controls to create a standard pattern automatically, or you can use the new pan position editor to create custom panning rhythms.

Direction

The Direction buttons here work just like they do in LFO mode. Again you can select from three basic directions.

Steps

The Steps control allows you to select how many steps there will be in the pattern. You can select 3, 4, or 5 steps. The steps will automatically be spaced out evenly in the stereo field. For instance, at the default Width of

90 degrees and Offset of 0 degrees, selecting three steps will cause PanMan to transition between -90, 0, and 90 degrees, 4 steps to transition between -90, -30, 30, and 90 degrees, and 5 steps to transition between -90, 45, 0, 45, and 90 degrees. You can use Width and Offset to scale and shift these positions.

Rhythm

The Rhythm control lets you select a rhythmic transition rate. This defines the rate at which the pan position will change from one position to another. For example, If you select "1/2 note, " PanMan will move to the next pan position every half note. Clicking on this control will bring up a menu that lets you select from a variety of beat lengths. You can also choose the "Edit" option, which will bring up the custom rhythm editor.

Note that when you select or create a custom rhythm, the Rhythm control will display the words "Custom" or the name of the custom Rhythm. When a custom rhythm is selected, the direction and steps control don't do anything, since they have no context within your custom rhythm. See the "Custom Rhythm (Point) Editor" section for more details on creating custom rhythms.

Feel

The Feel knob shifts your whole rhythm pattern in time, to get it "in the pocket" where it sounds best. By turning the dial clockwise, the each point in the pattern is shifted to the right (after the beat). This is called "Draggin'" because it makes each point in the pattern effectively "Drag" behind the beat.

By turning the dial counter-clockwise, each point in the pattern is shifted to the left (before the beat). This is called "Rushin'" because each point is "Rushed" ahead of the beat.

If any of your points are rushed or dragged before the beginning or after the end of the pattern, don't fret – they will wrap around and come in at the end or at the beginning (depending on whether you're Rushin' or Draggin'. This keeps your pattern the same shape no matter what.

If you're so inclined, you can think of Feel as adjusting the Phase of your pattern.

Custom Rhythm (Point) Editor

If you use any of our other plugins like Tremolator or FilterFreak, you'll notice that the Rhythm-Point editor works a lot like our old shape editor. You can move, add, or delete points (pan positions) to create complex modulation waveforms. The only difference is that here points are quantized to rhythmic beats shown by the grid. This allows you create a custom pattern of pan positions that work in concert with the beats of your source.

Adding, Deleting, and Moving Points

To move a point, simply click it and drag it. Dragging up/down will change the pan position of that point, and dragging left/right will change the time position. Points will automatically snap to rhythmic subdivisions, but if you want to move a point without this feature, you can command-click and

drag. Note that two points cannot exist at the same time, so if you try to drop a point where another point exists, it will simply return to wherever you moved it from.

To delete a point, simply option-click the point and poof! It's gone.

To add a new point, simply click on any vertical grid line that doesn't already have a point on it and a point will appear where you clicked. You can then move and adjust it to the exact place and time that you'd like.

Changing the Grid Spacing

To change the grid spacing, simply use the grid control to set the spacing to whatever subdivision you want.

Changing Pattern Length and Beats Per Bar

Just like in Rhythm:Shape mode, to create patterns longer than 1 bar simply adjust the Pattern Length control to the desired number. You can also adjust the number of Beats per Bar for the pattern up or down.

Smoothing Mode

You can select a smoothing mode from one of 5 modes with the Smoothing Mode knob to get all kinds of interesting transition shapes between points. This further increases the variety of waveforms you can get with the Rhythm Editor. The smoothing mode choices are as follows:

Linear: Points are connected with a straight line.
Sine: Produces a sinusoidal-like waveform, which is very smooth.
Exp: This is an abbreviation for "Exponential" Produces a "scooped", curved waveform where the curve rises quickly at first and then levels off slowly.
Sym: Produces a curved shape that is even and symmetrical.

Rev: This is an abbreviation for "Reverse Exponential." Produces the opposite of "Exp", where the waveform rises slowly at first, then faster and faster until it reaches the next point.

Saving Custom Step Rhythms

You can use the "Save Rhythm" button to save your custom rhythms just like a preset. This way you can recall really interesting patterns that you come up with later.

Tweak

The tweak button in Rhythm Step mode will open up the dynamics panel. This is the same as the dynamics panel for LFO mode, except there is no Rate Mod. See the description of the dynamics panel in LFO mode for a description of all the dynamic modulation options.

Rhythm Shape Mode

Rhythm: Shape mode is a more sophisticated version of the LFO and provides the means to sync the LFO (regardless of the shape) to the tempo of a song. Using this mode allows you to easily produce complex panning patterns that can be programmed in musical and rhythmic ways. You can select a basic shape (via the direction buttons) just like in LFO mode, and

then create complex, varied repetitions of your basic shape with the rhythm editor.

Direction

Use the direction buttons to select a basic panning direction. This determines the basic (under the hood) shape that you will build your rhythm with. Left-to-Right corresponds to a "Ramp Up" shape, Right-to-Left corresponds to a "Ramp Down" shape, and Back-and-Forth corresponds to a "Triangle" shape. The underlying shapes aren't so important - it's the panning motions that each shape creates that you should focus on.

Rhythm

You can also choose specific rhythmic divisions using the "Rhythm" menu. You can select from one of the included simple rhythms by clicking on the Rhythm LED display, which will launch a pop-up showing the available preset options. Simply highlight the desired rhythmic interval with your mouse and let go. You can also use the two nudge buttons to move through the various rhythm choices. Finally, selecting the "Edit" option will open up the Rhythm Pattern Editor.

Groove

The Groove control is used to adjust the feel and define the amount of "swing" feel to be added to the selected rhythm pattern. Turning the knob will add a 'swing' feel to the rhythm. Turning the knob down will add a 'shuffle' feel.

Custom Rhythm Editor

In addition to the preset rhythms provided, PanMan includes a powerful Rhythm Editor feature that allows you to create your own rhythms. To access the Rhythm Editor, select the Edit option from the Rhythm pop-up menu.

The Rhythm Editor works a bit like a simple drum machine. By default, the basic rhythm pattern is one bar long and is shown in the rhythm display. For each selected event in the rhythm pattern, one entire cycle of the LFO Shape (determined by the Symmetry and Smoothing knobs) will be triggered and played.

Adding and Deleting Events:

To add an event in a specific location simply click in the rhythm grid at the desired location and a new event will be added to the pattern. To remove an event, just click on the event you wish to remove and it will be deleted.

Changing Event Width and Duration:
There are two ways to change an event's width: drag the top down or drag the bottom up. To drag the top down, option-click and drag on any existing

event. Dragging up/down will drag the top of the event up or down. While holding option, you can also drag left/right to change the event's duration.

To drag the bottom up, you can command-click and drag on an existing event. Dragging up/down will change the location of the bottom of the event. If you hold down command and option and click, dragging up/down will move the entire event up or down while preserving its width.

Adjusting Grid Length and Spacing

You can adjust the grid spacing and length of any new events using the Grid control.

Pattern Length/Number of Beats per Bar:

Increasing the length of a pattern is easy. To create patterns longer than 1 bar simply adjust the Pattern Length control to the desired number. You can also adjust the number of Beats per Bar for the pattern up or down.

Saving a Custom Pattern:

Once you have created a custom pattern it can be stored and named for future recall. After creating your rhythm, the Rhythm LED display will show the word "custom." Pressing the Save button on the Rhythm Editor will allow you to name and save the pattern. Once saved, the new rhythm will appear in the Shape popup menu under the Preset menu entry.

Selecting a Rhythm Preset:

To select a Rhythm Preset, chose the "Presets" option in the Rhythm pop-up menu to view the list of available rhythms.

Tweak

The tweak button in Rhythm Shape mode will open up the dynamics panel. This is the same as the dynamics panel for LFO mode, except there is no Rate Mod. See the description of the dynamics panel in LFO mode for a description of all the dynamic modulation options

Random Mode

Random mode allows you to pan to a new, random position at rhythmic intervals. It's pretty simple and sounds great on just about everything. Simply use the Rhythm selector and the Tempo control to choose a beat length. Every beat, PanMan will pan to a new position. Use Smoothing to control how hard the jump is, and offset and width to control the range of possible positions. No tweak here. Just pure and simple random panning

Triggered Modes

PanMan has two "triggered" modes that both work on the same principle: when the incoming audio reaches a certain level, a pan transition will happen. The only difference between the two is what pattern the transitions follow. We describe both modes here and then their common controls. These modes are super useful for percussive instruments or other sources with lots of transients!

PingPong Mode

Ping-Pong mode allows you to alternate between pan positions on every trigger. The Offset and Width controls default so that the two positions are hard right and hard left, but you can adjust these so that PanMan bounces back and forth between any two positions.


Random Step

Random Step mode allows you to pan to a new, random position on every trigger. This is just like Random Mode, but trigger based instead of rhythm based.

Controls Common to Both Triggered Modes

Threshold and Manual Trigger

The threshold knob controls the level at which the input will cause a trigger event. To turn off audio based triggering (if you're using MIDI or manual triggering), set the threshold all the way up.

The button next to the threshold knob is the Manual Trigger button. Pressing this button will cause a trigger event. Note that the audio must be below the threshold for a Manual Trigger event to occur.
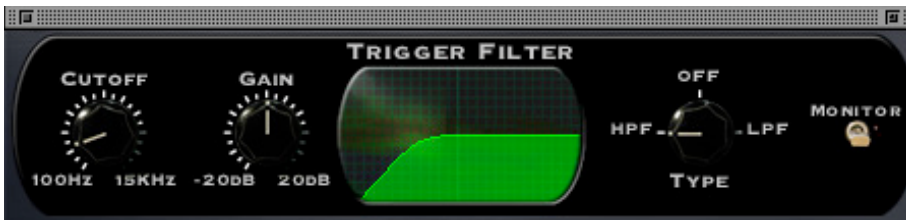
Trigger Filter Tweak

The incoming audio is passed through a filter before it hits the level detector. Pressing the tweak button in one of these modes will open up the Trigger Filter Tweak Panel, which gives you control over this filter. You can change the cutoff frequency, gain, and type of filter. You can choose from a high pass filter (HPF), low pass filter (LPF), or turn the filter off altogether.

Sometimes it is useful to "hear" what is going into the level detector so that you can use the trigger filter to carve out some specific part of the track to trigger pan transitions. You can flip the "Monitor" switch to hear the output of the trigger filter. The red LED next to the switch will light up when you are monitoring the trigger filter. The monitor switch will automatically turn

off when you close the tweak panel, so there is no way you can accidentally leave it on.

Trigger Divider

The Trigger Divider knob allows you to set the number of triggers that you want to occur before a transition is activated. The 7-segment LED display shows what number that the divider is currently set to, and each individual LED around the knob shows what the count is currently at. When this is set to 1, every trigger will cause a transition. When it is set to 2, every second trigger will cause a transition, and so on. You can set the trigger divider from 1 all the way to 12.

As an example, in the graphic above, the divider set to 8 and the current count (how many triggers have already happened) is 4.

FOR MORE DETAILS

If you made it this far, you deserve a medal! Now that you've taken the time to learn all about PanMan, go to it! Have fun, experiment, and make great sounds!

We offer free technical support for all registered users. We love to hear from you, but if you are having problems, please first try to look in the manual or on the support page of our web site for an answer. If you are still stumped, please e-mail us with the following info:

• The product version and serial number
• The version number of your audio system (e.g ProTools, Cubase, Ableton, etc) , and type of hardware (e.g.Digi-002, M-Audio interface, etc.)
• Your computer type and operating system version number (e.g. OS X 10.4.5, Windows XP SP3, etc.)
• A detailed description of the problem

The e-mail address for support is: support@soundtoys.com
If you don't have e-mail (What? There are people without e-mail?), you can call us at 1-802-951-9700.

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